

What is claimed is:

1. A projection system, comprising:
 - a light source;
 - a scrolling unit, including spirally arranged cylinder lens cells, to scroll an incident beam, from the light source, while rotating;
 - a color separation hologram to separate the incident into beams with different wavelengths;
 - a light valve to form a color image by turning on or off pixels according to an input image signal and color separated scrolling light beams; and
 - a projection lens unit to magnify the color image formed by the light valve and projecting the magnified color image toward a screen.
2. The projection system of claim 1, further comprising first and second fly-eye lenses between the light source and the light valve.
3. The projection system of claim 2, further comprising a relay lens between the second fly-eye lens and the light valve to focus color beams transmitted by the second fly-eye lens on respective color areas of the light valve.
4. The projection system of claim 3, further comprising a first cylinder lens before the scrolling unit and a second cylinder lens, paired with the first cylinder lens, after the scrolling unit to control a width of the incident beam.
5. The projection system of claim 3, further comprising a light path correction hologram to correct changes of light paths of color beams transmitted by the color separation hologram.
6. The projection system of claim 2, further comprising a first cylinder lens before the scrolling unit and a second cylinder lens, paired with the first cylinder lens, is installed after the scrolling unit to control a width of the incident beam.
7. The projection system of claim 2, further comprising a light path correction hologram to correct changes of light paths of color beams transmitted by the color separation hologram.

8. The projection system of claim 7, wherein the light path correction hologram prevents a light loss due to a generation of leaking light in the projection system.

9. The projection system of claim 1, wherein the scrolling unit comprises a disc comprising the spirally arranged cylinder lens cells.

10. The projection system of claim 1, wherein the projection system is a single-panel projection system.

11. The projection system of claim 1, wherein the scrolling unit and the light separation unit combine to scroll at least three separate color beams simultaneously.

12. The projection system of claim 1, wherein the arranged cylinder lens cells include a number of cylinder lens cells to synchronize the scrolling unit with an operating frequency of the light valve.

13. The projection system of claim 1, wherein a rotation frequency of the scrolling unit is controlled to synchronize the scrolling unit with an operating frequency of the light valve.

14. A projection system, comprising:
a light source;
a scrolling unit including spirally arranged cylinder lens cells;
a light valve forming a color image based on color separated scrolling light beams that are based at least on light beams from the light source scrolled by the scrolling unit; and
a projection unit to project the color image.

15. The projection system of claim 14, further comprising a color separation hologram separating a beam from the light source into beams with different wavelengths.

16. The projection system of claim 15, wherein the color separation hologram receives light beams scrolled by the scrolling unit.

17. A projection system, comprising:
a light source;
a scrolling unit to simultaneously scroll at least two incident light beams from the light source;
a light valve forming a color image based on color separated scrolling light beams that is based at least on one of the two scrolled light beams; and
a projection unit to project the color image.

18. The projection system of claim 17, further comprising a color separation hologram separating an incident beam from the light source into beams with different wavelengths.

19. The projection system of claim 18, wherein the incident beam separate by the color separation hologram is a beam scrolled by the scrolling unit.

20. The projection system of claim 17, wherein the scrolling unit comprises a disc comprising spirally arranged cylinder lens cells to perform the simultaneously scrolling of the at least two incident light beams from the light source.

21. A image generation method, comprising:
simultaneously scrolling at least two incident light beams from a light source; and
generating a color image based on color separated scrolling light beams that are based at least on one of the two scrolled incident light beams.

22. The image generation method of claim 21, further comprising separating a beam from the light source into beams with different wavelengths.

23. The image generation method of claim 22, wherein the beam separated by the color separation hologram is a beam scrolled by the scrolling unit.

24. A projection method, comprising:
simultaneously scrolling at least two incident light beams from a light source;
generating a color image based on color separated scrolling light beams that are based
at least on one of the two scrolled incident light beams; and
projecting the generated color image.

25. The projection method of claim 24, further comprising separating a beam from
the light source into beams with different wavelengths.

26. The projection method of claim 25, wherein the color separation hologram color
separates light beams scrolled by the scrolling unit.

27. The projection method of claim 25, further comprising correcting changes of light
paths of the beams with different wavelengths.

28. The projection method of claim 24, further comprising focusing color separated
scrolling light beams to respective color areas of a light valve for the projecting of the generated
color image.

29. The projection method of claim 28, further comprising controlling a width of a
beam incident upon the scrolling unit.